REMARKS/ARGUMENTS

Upon entry of this amendment, claims 1–38 will be pending. By this amendment, claims 1, 8, 22, 23, 25, 30, 31, 35, 36, and 38 have been amended. Support for these amendments is found in the specification and claims of the application as filed. No new matter has been added.

Applicants respectfully request entry of the foregoing amendments and reconsideration of the application in light of the amendments above and the remarks below.

I. 35 U.S.C. § 102 Rejection of Claims 1, 2, 4–6, 23, 25–32, and 35

In the non-final Office Action dated January 28, 2009 (referred to hereinafter as "the Office Action"), claims 1, 2, 4–6, 23, 25–32, and 35 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 7,269,423 by Lee et al. (referred to hereinafter as "Lee").

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP § 2131 (citing Verdegaal Bros. v. Union Oil Co. of California, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). "The identical invention must be shown in as complete detail as is contained in the ... claim." Id. (citing Richardson v. Suzuki Motor Co., 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)). In addition, "the reference must be enabling and describe the applicant's claimed invention sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention." In re Paulsen, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994).

Applicants respectfully submit that the claims as presented herein are patentably distinct from the cited references. The cited references do not disclose all of the subject matter in these claims.

Independent claim 1 as presented herein recites:

> first logic to determine if each of one or more remote devices corresponding to one or more data transmission indicators has a capacity ***commitment*** in an admission profile,
>
> wherein the admission profile is indicative of expected data requirements for flows already admitted; and
>
> second logic to allocate capacity in accordance with a data transmission indicator when a capacity ***commitment*** is found.

(Emphasis added.)

That an admission profile includes a ***commitment***, or ***contract***, for a data flow, is supported in the Specification. For example,

> In block 550, after a new flow has been admitted, modify the admission profile to include the ***commitment*** for the new flow. Those of skill in the art will recognize that there are myriad ways of representing an admission profile within the scope of the present invention. In the example embodiment, capacity is allocated in terms of OFDM symbols. A MAC superframe, consisting of 16 MAC frames, is deployed. The ***admission profile includes a commitment, or contract***, for a number of OFDM symbols in each MAC frame allocated to each admitted flow. In alternate embodiments, other units of capacity may be allocated, such as time slots in a TDM system, power and/or codes in a CDM system, etc. An admission profile may be at varying levels of time granularity, and may be of varying period length. Furthermore, a ***commitment*** for a flow need not be fixed to specific frames. For example, a flow may be allocated a certain number of symbols within a range of frames as part of its ***admission profile commitment***. The scheduler may have flexibility over which frames to allocate to the flow, so long as its contractual minimum is met within the specified range. *Specification, paragraph [0071]* (emphasis added).

When the scheduler receives one or more transmission indicators (e.g., transmission requests) from remote devices or applications, the scheduler looks for a ***commitment*** (i.e., ***contract***) for a flow corresponding to each device or application ***in an updated admission profile***. See *Specification, paragraph [0081], Figure 6*. The existence of a commitment for a flow for the device/application in the admission profile indicates that the requested flow ***has already been admitted***, but ***has not been allocated***. (See paragraphs [0068]–[0072] for explanation as to how a flow is admitted and how the admission profile is modified to reflect a new admission.) When a ***commitment*** is found, the scheduler may then ***allocate*** the flow according to the present state of the communications channel. As stated in the Specification,

> ...in general, the admissions control unit makes admission decisions on expected parameters (i.e. averages). However, the ***scheduler will be allocating capacity*** based on real-time data transmission requests, which are a function of the actual amount of data and the present state of the

> time-varying communications channel. *Specification, paragraph [0068]* (emphasis added).

The Office Action states, "[t]he scheduler also has a first logic (504 of Figure 9) ***to decide if the remote device has a requested capacity from the profile*** and a second logic (506, 512 of Figure 9) to provide data rate or capacity for the remote device (508, 514 of Figure 9; column 7, ines 44-67; column 8, lines 14-23)." *Office Action, page 2, section 4* (emphasis added). Applicants respectfully disagree with this interpretation of claim 1 and generally the applicability of Lee.

Lee discloses a "profile server" that appears to be essentially a database relating various services with subscribers ("users") with definitions for a QoS for each type of service per user. That is, the "profile server 40 stores information in user profiles such as the Identifier (ID) ***of each subscriber*** and authentication parameter." *Lee, Col. 1, lines 45–47; Figures 3A and 3B* (emphasis added). Also, "[i]n the same manner as the Service QoS Parameter Recorder, the Subscriber QoS parameter Recorder is determined according to the ***definition of QoS*** that minimum x bits and maximum z bits are transmitted for y seconds." *Lee, Col. 4, line 66 to Col. 5, line 2.* Thus, a user profile according to Lee contains information relating a type of service to a ***user***, and ***defining*** a QoS for the service.

The "profile" mentioned in the Office Action appears to be a message from the profile server:

> The BSC controller 311 determines whether the call requires a QoS guarantee and checks the service type of the call and its requirements in a message received from the MSC 30 in step 504. The ***message*** is preferably ***in the format illustrated in FIG. 8A or 8B.*** The MSC 30 receives the ***message from the profile server 40*** and forwards it to the BSC 20. *Lee, Col. 8, lines 14–20* (emphasis added).

According to Lee, the "profile" message contains substantially a repetition of the subscriber information and QoS definitions associated with the user as stored in the "profile server." See *Lee, Figures 3A, 3B, 8A, and 8B.* Indeed, "[t]he ***message structures*** illustrated in FIGS. 8A and [8]B ***match the user profiles*** illustrated in FIGS. 3A and 3B, respectively." *Lee,*

Col. 7, lines 66–67 (emphasis added). Thus Lee discloses a "user profile" based on a ***subscriber***, containing only ***definitions*** of a QoS for a particular service type.

The Office Action further states "Lee further discloses the profile is modified to indicate ***flows that have been admitted*** (412 of Figure 5; column 6, lines 48-54; 514 of Figure 9; column 9, lines 10-18)." *Office Action, pages 2–3, section 4* (emphasis added). Applicants respectfully disagree with this interpretation of Lee.

As discussed above, a "profile" according to Lee is depicted in the "user profiles" of Figures 3A and 3B which are stored in the "profile server," and in the message formats of Figures 8A and 8B. Block 412 of Figure 5 only discloses "calculating remaining bandwidth," which is described according to a formula. See *Lee, Col. 6, lines 48–52*. Lee does not disclose, however, "modifying" the "profile" in any way. In fact, Lee appears to be silent as to how a user profile is created or modified in any way at all.

Therefore, since Lee discloses a "user profile" based on a ***subscriber***, Lee fails to teach or suggest "first logic to determine if each of one or more ***remote devices*** corresponding to one or more data transmission indicators ***has a capacity commitment in an admission profile***," as recited in claim 1 presented herein.

Moreover, since Lee's "profile" contains subscriber-related information and QoS ***definitions***, Lee fails to teach or suggest a "a capacity ***commitment*** in an ***admission profile***, wherein the admission profile is indicative of expected data requirements for ***flows already admitted***; and second logic to allocate capacity in accordance with a data transmission indicator ***when a capacity commitment is found***," as is also recited in claim 1.

Thus Lee fails to teach or suggest all of the limitations of claim 1. Based on the foregoing discussion, claim 1 should therfore be allowable over Lee. Further, since independent claims 23, 25, 30, 31, and 35 parallel claim 1 and recite similar limitations as recited therein, claims 23, 25, 30, 31, and 35 should also be allowable over Lee. Furthermore, since claims 2, 4–6, 26–29, and 32 depend from one of claims 1, 23, 25, 30, and 31, claims 2, 4–6, 26–29, and 32 should also be allowable over Lee.

Accordingly, it is submitted that the rejection of claims 1, 2, 4–6, 23, 25–32, and 35 based upon 35 U.S.C. §102(e) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

II. 35 U.S.C. § 103 Rejection of Claim 7

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Meggers et al. (U.S. Patent No. 6,728,270; referred to hereinafter as "Meggers").

As discussed in the foregoing, independent claim 1 should be allowable over Lee. Claim 7 depends from claim 1, so therefore claim 7 should also be allowable over Lee. Meggers was cited for disclosing merely a system using best-effort queues. See *Office Action, page 7.* However, even assuming that Meggers discloses a system using best-effort queues, Meggers fails to cure the aforementioned deficiencies of Lee. Therefore, since claim 7 should be allowable over Lee as discussed above, Lee and Meggers, individually or in combination, fail to teach or suggest all the limitations of claim 7.

Accordingly, it is submitted that the rejection of claim 7 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

III. Claim 3 Rejected Under 35 U.S.C. § 103

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Dulin (U.S. Patent No. 6,567,387; referred to hereinafter as "Dulin").

As discussed in the foregoing, independent claim 1 should be allowable over Lee. Since claim 3 depends from claim 1, claim 3 should also be allowable over Lee. Dulin was cited for disclosing merely a communication system for scheduling data transmission. See *Office Action, page 8.* However, even assuming that Dulin discloses a communication for scheduling data transmission, Dulin fails to cure the aforementioned deficiencies of Lee. Therefore, since claim 3 should be allowable over Lee as discussed above, Lee and Dulin, individually or in combination, fail to teach or suggest all the limitations of claim 3.

Accordingly, it is submitted that the rejection of claim 3 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

IV. Claims 8, 9, 11, 13, 14, 15–17, 19, 20, 22, 24, 33, and 34 Rejected Under 35 U.S.C. § 103

Claims 8, 9, 11, 13, 14, 15–17, 19, 20, 22, 24, 33, and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Haartsen (U.S. Patent No. 6,650,630; referred to hereinafter as "Haartsen").

Based on the foregoing, independent claims 1, 23, 25, and 31 should be allowable over Lee. Since independent claims 8 and 22 parallel claim 1 and recite similar limitations as recited therein, claims 8 and 22 should also be allowable over Lee. Since claims 9, 11, 13, 14, 15–17, 19, 20, 24, 33, and 34 depend from one of independent claims 8, 23, and 31, claims 9, 11, 13, 14, 15–17, 19, 20, 24, 33, and 34 should also be allowable over Lee.

As to claim 8, the Office Action states "Haartsen discloses a time-domain division system that allocates bandwidth over a number of time slots...." *Office Action, page 9.* Even assuming that Haartsen discloses a time-domain division system that allocates bandwidth over a number of time slots, Haartsen fails to teach or suggest the deficiencies of Lee discussed in the foregoing. Therefore, since claim 8 should be allowable over Lee as discussed above, Haartsen and Lee, individually or in combination, fail to teach or suggest all the limitations of claim 8.

As to claim 9, the Office Action states "Lee further discloses the data rate is determined by the reserved data rate...." *Id.* Even assuming that Lee further discloses the data rate is determined by the reserved data rate, Lee fails to teach or suggest its other deficiencies as discussed in the foregoing. Therefore, claim 9 should therefore be allowable over Lee.

As to claim 11, the Office Action states "Lee further discloses a RF module... to receive requests." *Id.* Even assuming that Lee further discloses such a RF module, Lee fails to teach or suggest its other deficiencies as discussed in the foregoing. Therefore, claim 11 should therefore be allowable over Lee.

As to claim 13, the Office Action states "Lee further discloses a RF module...to transmit grants." *Id.* Even assuming that Lee further discloses such a RF module, Lee fails to teach or suggest its other deficiencies as discussed in the foregoing. Therefore, claim 13 should therefore be allowable over Lee.

As to claim 15, the Office Action states "Lee further discloses a number of service levels...." *Id.* Even assuming that Lee further discloses a number of service levels, Lee fails to teach or suggest its other deficiencies as discussed in the foregoing. Therefore, claim 15 should therefore be allowable over Lee.

As to claim 16, the Office Action states "Lee further discloses the remote devices will include a QoS indicator...and the allocated data rate will include the previous allocations from other remote devices...." *Office Action, page 10.* Even assuming that Lee further discloses the remote devices will include a QoS indicator...and the allocated data rate will include the previous allocations from other remote devices, Lee fails to teach or suggest its other deficiencies as discussed in the foregoing. Therefore, claim 16 should therefore be allowable over Lee.

As to claim 17, the Office Action states "Lee further discloses a number of QoS levels...." *Id.* Even assuming that Lee further discloses a number of QoS levels, Lee fails to teach or suggest its other deficiencies as discussed in the foregoing. Therefore, claim 15 should therefore be allowable over Lee.

As to claim 19, the Office Action states "Lee further discloses the remote devices will include a QoS indicator ... and the allocated data rate will include the previous allocations from other remote devices ..., then allocating a remaining data rate capacity..., and then allocating in response to a second service level...." *Id.* Even assuming that Lee further discloses the remote devices will include a QoS indicator ... and the allocated data rate will include the previous allocations from other remote devices ..., then allocating a remaining data rate capacity..., and then allocating in response to a second service level, Lee fails to teach or suggest its other deficiencies as discussed in the foregoing. Therefore, claim 19 should therefore be allowable over Lee.

As to claim 20, the Office Action states "Lee further discloses a number of QoS levels...and must allocate data rates in accordance with the different QoS levels." *Id.* Even assuming that Lee further discloses a number of QoS levels...and must allocate data rates in accordance with the different QoS levels, Lee fails to teach or suggest its other deficiencies as discussed in the foregoing. Therefore, claim 20 should therefore be allowable over Lee.

As to claim 22, the Office Action states "Haartsen discloses a time-domain division system that allocates bandwidth over a number of time slots...," and "[b]andwidth allocation profiles are provided for individual mobile device users...." *Office Action, page 11.* Even assuming that Haartsen discloses a time-domain division system that allocates bandwidth over a number of time slots and bandwidth allocation profiles are provided for individual mobile device users, Haartsen fails to teach or suggest the deficiencies of Lee discussed in the foregoing. Therefore, since claim 22 should be allowable over Lee as discussed above, Haartsen and Lee, individually or in combination, fail to teach or suggest all the limitations of claim 22.

As to claims 14 and 24, the Office Action states, "Lee does not disclose modifying an admission profile to incorporate a data flow. Haartsen, ... discloses an admission profile generated by the collection of transmission requests from the remote terminals...." *Office Action, page 11.* Applicants respectfully disagree with this interpretation.

It is stated in the Specification, "the admissions control unit evaluates the availability of capacity for the requested new flow, based on the ***existing admission profile***, which is indicative of the expected data requirements for the ***flows already admitted***. An example manner of determining how to incorporate a requested flow ***in light of an existing profile*** is described above with respect to FIG. 4." *Specification, paragraph [0069]* (emphasis added). As a result, for example, "***[u]nused resources*** in a MAC frame ***are made available to other flows***." *Id., at paragraph [0040]* (emphasis added).

By contrast, Haartsen discloses that "the task is to ***find a solution to a combinatorial packing problem***, like the popular game Tetris. If there are N services (users) and K radios, then there are K^N/K, or K^{N-1}, ***possible combinations to consider***, and one usually wants the combination yielding the best overall efficiency (i.e., fewest unused slots)." *Haartsen, Col. 11, lines 13–18* (emphasis added). Further, "[o]ne way is simply to ***carry out an exhaustive search, testing all possible combinations***." *Id., at Col. 11, lines 25–27* (emphasis added). Thus, Haartsen fails to teach or suggest at least "conditionally admitting the flow when the flow parameters, ***if combined with the admission profile***, would not exceed the system capacity," as recited in claims 14 and 28.

Moreover, Haartsen fails to teach or suggest at least an admission profile that is ***indicative of expected data requirements for flows already admitted***, as recited in independent claims 8 and 23, upon which claims 14 and 24 depend, respectively. Thus, Haartsen fails to cure the aforementioned deficiencies of Lee. Therefore, since claims 14 and 24 should be allowable over Lee as discussed, Lee and Haartsen, individually or in combination, fail to teach or suggest all the limitations of claims 14 and 24.

As to claim 33, the Office Action states, "Haartsen discloses an admission profile generated by the collection of transmission requests from the remote terminals .... The admission profile contains a bandwidth ratios ... and frequency assignments...." *Office Action, page 12.* However, even assuming Haartsen discloses an admission profile containing bandwidth ratios and frequency assignments, Haartsen fails to teach or suggest at least an admission profile that is ***indicative of expected data requirements for flows already admitted***, as recited in independent claim 31, upon which claim 33 depends. Thus, Haartsen fails to cure the deficiencies of Lee. Therefore, since claim 33 should be allowable over Lee as discussed, Lee and Haartsen, individually or in combination, fail to teach or suggest all the limitations of claim 33.

As to claim 34, the Office Action states, "Haartsen ... discloses an admission profile generated by the collection of transmission requests from the remote terminals ...(where the profile is changed depending on the group of tansmission requests). *Office Action, page 13.* However, even assuming that Haartsen discloses an admission profile generated by the collection of transmission requests from the remote terminals, Haartsen fails to teach or suggest at least an admission profile that is ***indicative of expected data requirements for flows already admitted***, as recited in independent claim 31, upon which claim 34 depends, and which is discussed above. Thus, Haartsen fails to cure the deficiencies of Lee. Therefore, since claim 34 should be allowable over Lee as discussed, Lee and Haartsen, individually or in combination, fail to teach or suggest all the limitations of claim 34.

Accordingly, it is submitted that the rejection of claims 8, 9, 11, 13, 14, 15–17, 19, 20, 22, 24, 33, and 34 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

V. Claims 12 and 18 Rejected Under 35 U.S.C. § 103

Claims 12 and 18 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Haartsen and further in view of Meggers. While the Office Action includes Haartsen as a basis for rejection, only Lee and Meggers are cited in the supporting argument. Accordingly, only Lee and Meggers are addressed in the following argument for overcoming the rejection.

As discussed in the foregoing, independent claim 8 should be allowable over Lee. Since claims 12 and 18 depend from claim 8, claims 12 and 18 should also be allowable over Lee. Meggers was cited for disclosing merely a system using best-effort queues. See *Office Action, page 13*. However, even assuming that Meggers discloses a system using best-effort queues, Meggers fails to cure the deficiencies of Lee. Therefore, since claims 12 and 18 should be allowable over Lee as discussed above, Lee and Meggers, individually or in combination, fail to teach or suggest all the limitations of claims 12 and 18.

Accordingly, it is submitted that the rejection of claims 12 and 18 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

VI. Claims 10 and 21 Rejected Under 35 U.S.C. § 103

Claims 10 and 21 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Haartsen and further in view of Dulin. While the Office Action includes Haartsen as a basis for rejection, only Lee and Dulin are cited in the supporting argument. Accordingly, only Lee and Dulin are addressed in the following argument for overcoming the rejection.

As discussed in the foregoing, independent claim 8 should be allowable over Lee. Since claims 10 and 21 depend from claim 8, claims 10 and 21 should also be allowable over Lee. Dulin was cited for disclosing merely a communication system for scheduling data transmission. See *Office Action, page 14*. However, even assuming that Dulin discloses a communication for scheduling data transmission, Dulin fails to cure the deficiencies of Lee. Therefore, since claim 3 should be allowable over Lee as discussed above, Lee and Dulin, individually or in combination, fail to teach or suggest all the limitations of claims 10 and 21.

Accordingly, it is submitted that the rejection of claims 10 and 21 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

VII. 35 U.S.C. § 103 Rejection of Claims 36 and 38

Claims 36 and 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Kumar et al. (U.S. Patent No. 7,085,279; referred to hereinafter as "Kumar").

As discussed in the foregoing, independent claim 35 should be allowable over Lee. Since claims 36 and 38 depend from claim 35, claims 36 and 38 should also be allowable over Lee. Kumar was cited for disclosing merely "a computer readable medium storing a program to perform a connection setup over a packet network in conjunction with a switching network...." *Office Action, pages 15 and 16.* However, even assuming that Kumar discloses such a computer readable medium, Kumar fails to cure the aforementioned deficiencies of Lee. Therefore, since claims 36 and 38 should be allowable over Lee as discussed above, Lee and Kumar, individually or in combination, fail to teach or suggest all the limitations of claims 36 and 38.

Accordingly, it is submitted that the rejection of claims 36 and 38 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

VIII. Claim 37 Rejected Under 35 U.S.C. § 103

Claim 37 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Kumar and further view of Haartsen. While the Office Action includes Kumar as a basis for rejection, only Lee and Haartsen are cited in the supporting argument. Accordingly, only Lee and Haartsen are addressed in the following argument for overcoming the rejection.

As discussed in the foregoing, independent claim 36 should be allowable over Lee. Since claim 37 depends from claim 36, claim 37 should also be allowable over Lee. Haartsen was cited for disclosing merely "an admission profile generated by the collection of transmission requests from the remote terminals ...." *Office Action, page 17.* However, even assuming that Haartsen discloses such a computer readable medium, Haartsen fails to cure the deficiencies of

Lee. Therefore, since claim 37 should be allowable over Lee as discussed above, Lee and Haartsen, individually or in combination, fail to teach or suggest all the limitations of claim 37.

Accordingly, it is submitted that the rejection of claim 37 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicants respectfully request reconsideration of claims 1–38, in view of the remarks and submit that all pending claims are presently in condition for allowance. Applicants do not acquiesce to any of the positions set forth by the Examiner in any of the present and prior Office Actions.

In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicants' representative at the telephone number written below.

The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account 17-0026.

Respectfully submitted,

Dated: April 28, 2009

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